USSR

UDC 621.355.8.035.2

ANTONENKO, P. A., GULYAKOV, YU. M., and SAGOYAN, L. N.

"Study of the Specific Conductivity of the Active Mass of a Nickel Oxide Electrode"

Khim. tekhnologiya. Resp. mezhved. tematich. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 44-51 (From Ref Zh-Khimiya, No 6 (II), Jun 72, Abstract No 6L245)

Translation: The magnitude of the specific conductivity of active masses of nickel oxide electrodes cycling in different electrolytes (KOH, NaOH and LiOH) are defined as functions of the temperature and degree of oxidity. The mathematical equations describing the indicated functions are presented. The conductivity of the active mass of the nickel oxide electrode increases with an increase in temperature. The sharpest variation of the conductivity is observed in the low temperature range (-50 to +10°). With an increase in the degree of oxidity, the conductivity of the active mass also increases and reaches a limiting value for an "active oxygen" content in the mass >6%. This is explained by the appearance of a sufficient amount of higher nickel oxides (in all probability NiO_2) in the mass which have high conductivity.

1/1

USSR

UDC 621.355.6.035.6

ANTONENKO, P. A., BARSUKOV, V. Z., SAGOYAN, L. N.

"Study of the Conductivity of Electrolytes used in Alkaline Batteries"

Khim. tekhnologiya. Resp. mezhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 42-44 (from RZh-Khimiya, no 6 (11), Jun 72, Abstract No 6L240)

Translation: An experimental test was run on the colloid-liquid compound method for measuring the conductivity of solutions of strong electrolytes to DC current. The results obtained when investigating the conductivity of KOH, NaOH, LiOH and KOH+LiOH solutions in a broad temperature and concentration range agree well with the published data.

1/1

USSR

UDC 621.35.035.2.001.2

ANTONENKO, P. A., BARSUKOV, V. Z., CAGOYAN, L. N.

"Calculation of Dynamic Characteristics of 3-Phase Liquid Non-Lamellate Electrodes"

K Raschetu Dinamicheskikh Kharakteristik Trekhfaziykh Zhidkostnykh Bezlamel'nykh Elektrodov,Moscow, 1971, 10 pages. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4L226 Dep by the authors).

Translation: A method is studied allowing a significant reduction in the number of dynamic characteristics of charging (discharging) of a 3-phase liquid non-lamellate electrode which must be calculated. It is established that the dynamic characteristics of electrodes of various thicknesses are similar at identical temperature. In connection with this, it is sufficient to calculate only one dynamic characteristic, from which a transition can be made to an arbitrary version of the electrode by changing the scales along the coordinate axes. Relationships are presented for calculation of the internal resistance of an electrode and the energy losses on the electrode during the discharge process. The use of elements of the theory of similarity allows the time expenditure to be reduced, while improving the clarity and generality of the results and allowing studies to be performed in analytic form.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RESONANCE OF D,D,P, PRIME3 T REACTION AT LOW ENERGIES -U-

AUTHOR-(03)-ACYASEVICH, B.P., ANTONENKO, V.G., FOMENKO, O.YE.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(4), 732-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DEUTERIUM, DEUTERON BOMBARDMENT, TRITIUM, RESONANCE ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1000 STEP NO--UR/0367/70/011/004/0732/0735

CIRC ACCESSION NO--AP0124659

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VECTOR PRIMEA SUB2 (90DEGREES) AND TENSORS P PRIMEA SUB33 (90DEGREES) AND P PRIMEA SUB11 (90DEGREES) MINUS P PRIMEA SUB22 (90DEGREES) OF THE REACTION D(D,P) PRIME3 H (A POLARIZED D BEAM) WERE MEASURED IN THE ENERGY REGION 60-150 KEV AS WELL AS THE LEFT RIGHT ASYMMETRY EPSILON(90DEGREES) OF THIS REACTION IN THE REGION 60-505 KEV. THE DETD. VALUES HAVE NO RESONANCE SINGULARITIES WHICH WERE PREVIOUSLY OBSD. PARTICULARLY NEAR 105 KEV. FAICLITY: INST. AT. ENERG. IM. KURCHATOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 621.375.127(088.8)

ANTONENKO, V. I., Krasnodar Affiliate of the All-Union Scientific Research Institute of Geophysics

"Paraphase Amplifier"

USSR Author's Certificate No 264473, filed 17 May 68, published 12 Jun 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D99 P)

Translation: This Author's Certificate introduces a paraphase amplifier based on two vacuum tube triodes. To obtain the maximum amplitude of the antiphase voltage, the base-emitter junction of an auxiliary transistor is connected between the tube cathodes, the collector of this transistor being connected to the central point of a resistive divider in the cathode of the first triode, and to the grid of the second triode.

1/1

ANTONENKOVA, I. N.

hydrometeorology

1/2 047 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CALCULATION OF THE THREE DIMENSIONAL SUPERSONIC FLOW PAST BLUNTED BODIES WITH BENDS IN THE GENERATING LINE, WITH ALLOWANCE FOR THE

AUTHOR--ANTONETS, A.V.

A

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA, MAR.-APR. 1970, P. 178-181

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERSONIC FLOW, BLUNT BODY, EQUATION OF STATE, FROZEN FLOW, GAS STATE, ALGORITHM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1325 STEP NO--UR/0421/70/000/000/0178/0181

CIRC ACCESSION NO--AP0124975

UNCLASSIFIED

2/2 047 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124975

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF FINITE DIFFERENCE ALGORITHM FOR CALCULATING THE SUPERSONIC FLOW REGION FOR THREE DIMENSIONAL STEADY FLOWS PAST BLUNTED BODIES WITH NUMBEROUS BENDS IN THE GENERATING LINE OF AN INVISCID GAS WHOSE STATE AT HIGH HYPERSONIC FLIGHT SPEEDS CAN BE CHARACTERIZED BY EQUILIBRIUM OR FROZEN PHYSICOCHEMICAL PROCESSES. THE ALGORITHM PROPOSED MAKES IT POSSIBLE TO DETERMINE INDIVIDUALLY SUCH CHARACTERISTIC FLOW REGIONS AS VORTEX SHEETS, AND REGIONS DESCRIBED BY VARIOUS EQUATIONS OF STATE. THE INFLUENCE OF NONEQUILIBRIUM PHYSICOCHEMICAL REACTIONS IS STUDIED ON THE BASIS OF A MODEL OF A FLOW THAT IS FROZEN OVER THE ENTIRE SHOCK LAYER OR ONLY THE PORTION OF THE LAYER ADJACENT TO THE SURFACE OF THE BODY. THE RESULTS ARE ANALYZED, AND ARE APPLIED TO SEVERAL EXAMPLES.

UNCLASSIFIED

USSR

UDC 621.391.2

ALEKSEYEV, V. A., ANTONETS, M. A., GATELYUK, E. D., ZHIVORA, P. S., IVANOV, B. S., KRYUKOV, A. YE., TIKHONOV, YU. A., YANKAVTSEV, M. V.

"Interference Correlometer using a Digital Computer"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 332-339

Abstract: Specific problems connected with the construction of a correlation detection system in which the receivers are located at a distance excluding the possibility of direct coupling with the correlator are discussed. The problems of constructing the interference correlometer with recording of the investigated signals at each point on magnetic tapes and calculation of the correlation function on a digital computer are considered. The peculiarities of calculating the correlation function connected with the application of superheterodyne receivers are noted, and results are presented from laboratory checking of the system. Satisfactory coincidence of the experimental and theoretical results was obtained. For 10 kilohertz $\leq$ F $\leq$ 75 kilohertz and T = 30 seconds, the correlation gain of the developed system Q = 1000. The investigated system can also be used for autocorrelation and cross correlation analysis of processes represented by electric signals and for spectral analysis of signals represented in analog form for multilevel quantization at a digital computer input.

1/1

USSR

UDC 621.317.78

SHAKIRZYANOV, F. N., ANTONETS, YE. P.

"Utilization of the Frequency Characteristics of Nonlinear Gyromagnetic Effects in Measuring Superhigh-Frequency Power"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya. Podsekts. ferritovoy SVCh radiofiziki (Reports of the Scientific and Technical Conference on the Results of Scientific Research Work for 1968-1969. Moscow Power Engineering Institute, 1970. Radiotechnical Section. Ferrite Supernigh Frequency Radio Physics Subsection), Moscow, 1969, pp 62-65 (from RZh-Radiotekhnika, No 3, Mar 70, Abstract No 3A312)

Translation: The effect of low-frequency oscillation generation occurs in a circuit formed by the capacitance and inductance of a coil wound on a ferrite sample in a waveguide under conditions of ferromagnetic resonance. Earlier, when analyzing this phenomenon the effect of the super-nigh-frequency power level fed to the sample was not considered. Consideration of this effect shows that with a power exceeding the Sulovskiy threshold, the frequency variation of the low-frequency signals becomes significant. This phenomenon also occurs during automodulation (instability of ferromagnetic resonance). The frequencies and amplitudes of the automodulated low-frequency signals are presented as functions of the magnitude of the superhigh-frequency power. The indicated

1/2

USSR

SHAKIRZYANOV, F. N., et al, Dokl. Nauchno-tekhn. Konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya Podsekts. ferritovoy SVCh radiofiziki, Moscow, 1969, pp 52-55

relation can serve for measuring the superhigh-frequency power in the wave range of 1-30 cm with a power from units of megawatts to units of kilowatts. The experiments were performed in the 10 gigahertz range. The bibliography has three entries.

2/2

A

UDC 621.317.79

USSR

SHAKIRZYANOV, F. N., ANTONETS, YE. P.

"Selective Ferrite Pulse and Continuous Superhigh-Frequency Power Meter"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya, Podsekts. ferritovoy SVCh radiofiziki (Reports of the Scientific and Technical Conference on the Results of Scientific Research Work for 1968-1969. Moscow Power Engineering Institute, 1970. Radiotechnical Section. Ferrite Superhigh Frequency Radio Physics Subsection), Moscow, 1969, pp 66-69 (from RZh-Radiotekhnika, No 3, Mar 70, Abstract No 3A311)

Translation: A ferrite limiter is used to measure superhigh-frequency power. The power goes via a graduated attenuator A_1 to a separator which separates it in half and feeds it to two channels, B and C. A graduated attenuator A_2 is installed in channel B, and a ferrite limiter, in channel C. The signals from B and C are fed alternately to the detector and the indicator, and they are equalized with the help of A_1 and A_2. The sum of the readings of A_1 and A_2 is equal to the magnitude by which the measured power is greater than the restriction threshold. The restriction threshold is a variable which is stable with time and in a broad temperature range. Depending on selection of the type of limiter,

1/2

USSR

SHAKIRZYANOV, F. N., Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya, Podsekts. Ferritovoy SVCh radiofiziki, Moscow, 1969, pp 60-69

the meter can be constructed for the corresponding power levels. In the opinion of the authors, the meter can serve as an adjustable, frequency selective power standard. The bibliography has four entries.

2/2

USSR

UDC 621.317.38

SHAKIRZYANOV, F. N., ANTONETS, YE. P., MIKHAYLOVSKIY, L. K., Moscow "Order of Lenin" Power Engineering Institute"

"A Method of Measuring Microwave Pulse Power"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 274853, Filed 1 Nov 68, p 228

Abstract: This author's certificate introduces a method of measuring microwave pulse power by means of a magnetic detector placed in the channel of the power to be measured, and located in a fixed magnetic field. As a distinguishing feature of the patent, the level of the microwave pulse signal power to be measured is increased by setting the magnitude of the magnetic field equal to its value in the case of additional resonance in a ferrite specimen. The amplitude or frequency of the low-frequency oscillations generated by the magnetic detector is taken as the measure of the microwave power.

1/1

USSR

UDC 541.64:542.954

ANNENKOVA, V. Z., ANTONIK, L. M., and ANNENKOVA, V. M., Irkutsk Inztitute of Organic Chemistry, Siberian Affiliate of the Academy of Sciences USSR, Irkutsk

"Phosphorylation of Polyacroleins"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, (A), No 9, Sep 73, pp 2104-2105

Abstract: Samples of two polyacroleins (one with up to 25% of -C=C-groups and 75% of aldehyde groups and another with up to 60% of aldehyde groups and 28% of -C=C-groups) were reacted with PCl_3 on being suspended in glacial acetic acid, whereupon the intermediate compound was hydrolyzed with a minimum amount of H_2O. With an increasing reaction time in the 3-10 hrs range, the content of P in the products increased. Potentiometric titration showed that the phosphorylated polymers were rather strong monofunctional acids with acid numbers of 2,4-3,8 mg-equiv/g that corresponded to the P content of the polymers if the calculation was carried out for a monofunctional acid. Evidently cross-linking over P-OH groups with the formation of P-O-P groups took place. With an increasing length of the reaction time, the number of -C(=O)H groups decreased and cross-linking over the double bonds of -C=C- groups took place to an increasing extent.

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE SHOP OF DISCOVERIES -U-

AUTHOR--ANTONISHIN, N.

COUNTRY OF INFO--USSR

SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, JULY 28, 1970, P 2, COL 5

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG PRODUCTION, ISONIAZID, SULFA DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0892 STEP NO--UR/0533/70/000/000/0002/0002

CIRC ACCESSION NO--AN0122936

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0122936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE ENUMERATES SOME OF THE TECHNIQUES DEVELOPED BY THE INSTITUTE FOR INDUSTRY, ONE OF THEM IS THE METHOD OF DESICCATING AND HEAT TREATING DRUGS IN A PULSING FLUIDIZED BED. THIS METHOD HAS BEEN SUCCESSFULLY EMPLOYED IN MASS PRODUCTION LINES IN KHAR'KOV, BORISOV, AND OTHER CITIES, CUTTING THE DESICCATING TIME OF THE ISONIAZID FROM 7 HOURS TO 7 MINUTES AND THAT OF SULFATHIAZOLE FROM 6 HOURS TO 5 MINUTES. FACILITY: INSTITUTE OF HEAT AND MASS EXCHANGE OF THE ACADEMY OF SCIENCES OF THE BELORUSSIAN REPUBLIC.

UNCLASSIFIED

Acc. Nr: AP0049036 Ref. Code: UR 0607

PRIMARY SOURCE: Vestnik Otorinolaringologii, 1970, Nr 1, pp 57-61

THE RESULTS OF PROSPIDINE TREATMENT OF PATIENTS WITH LARYNGEAL CANCER

V. S. Pogosov, V. A. Chernov, V. F. Antoniu (Moscow)

In 52 patients with laryngeal cancer (II, III and IV stages) a new antiblastic preparation — prospidine — was employed. Most of the patients were treated clinically, some outpatiently. The preparation was administered intravenously. In relapses of the [illegible] after surgery and cancer metastases into cervical lymph nodes prospidine could be introduced directly into the neoplastic tissue. The preparation is endowed with a moderately marked antiblastic and antiphlogistic effect. In 36 patients out of 52 a positive therapeutic effect was achieved — a significant reduction of the primary tumor, almost complete disappearance of metastatic lymph nodes, decrease of perifocal inflammation, rejection of necrotic masses. Metastases and low-differentiated forms of cancer were most sensitive to the preparation.

Prospidine is superior to other antiblastic agents (endoxan, sarcolysin, dipine, dopan, etc.), since its toxicity is insignificant in comparison with there preparations. It is well tolerated by patients, does not depress the hematopoietic function, in combination with actinotherapy it intensifies the antiblastic action of rays.

REEL/FRAME
19800820

USSR

FURSEY, G. N., ANTONOV, A. A., and ZHUKOV, V. M.

"Exploding Emission Accompanying the Transition from Field Emission to Vacuum Breakdown"

Leningrad, Vestnik Leningradskogo Universiteta: Fizika, Khimiya; April-June, 1971, pp 75-78

Abstract: The effect of the transition from field emission to vacuum breakdown has been studied on a single tungsten tip (the field current densities range, $4 \cdot 10^7$ A/cm^2 - $3 \cdot 10^9$ a/cm^2; pulse duration range, $5 \cdot 10^{-9}$ - $3 \cdot 10^{-8}$ sec). The presence of an abrupt electron current rise at the start of breakdown with the following slow electron current increase during the development of the break-down process was observed (abrupt current rise rate is 10^9 a/sec at $j \approx 10^9$ a/cm^2 and 10^8 a/sec at $j \approx 10^8$ a/cm^2). Electron microscope studied show that microprotrusions form on the emitter surface during the break-down process. It takes only $(2-3) \cdot 10^{-9}$ sec for such a protrusion to occur. This proves the presence of a very strong electric field near the surface of the exploded tip during the formation of break-down.
1/1

USSR UDC: 621.372.061:538.56

ANTONOV, A. A.

"Resonance in the Complex Plane"

V sb. Nekotoryye vopr. teorii i proyektir. t. l. ekonomo-vychisl. sistem (Problems in the Theory and Design of Television-Computer Systems) Tula, 1970, pp 36-47 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A148)

Translation: It is shown that resonance phenomena may occur in any linear circuits with the approach of the complex frequencies of free oscillations to the complex spectrum components of the input activity. Resume

1/1

USSR UDC: 621.396.6.019.3

ANTONOV, A. A.

"On the Problem of Determining the Number of Parameters for Checking Electronic Radio Equipment"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute, 1970, vyp. 10, pp 151-153 (from RZh--Radiotekhnika, No 1, Jan 71, Abstract No 1A147)

Translation: The author considers one of the methods of determining the number of parameters for automatic monitoring of electronic radio equipment during use. An analytical expression is found for the specific weight of the parameter to be checked and necessary recommendations are given for selecting the influence factor. One illustration, bibliography of three titles. Resumé.

1/1

USSR UDC 621.374.33

ANTONOV, A. A.

"Synthesis of Pulse Circuits"

Nekotoryye vopr. teorii i proyektir. televizionnovychisl. sistem -- V sb. (Some Problems of Theory and Design of Television Computing Systems -- collection of works), Tula, 1970, pp 48-63 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G240)

Translation: The so-called structural method of synthesizing switching circuits based on describing the synthesized circuit by a set of immitance functions is discussed. The possibilities of switching circuits, in particular, the possibility of shaping FM-signals with their help are investigated in detail by this method. The bibliography has 2 entries.

1/1

USSR UDC 621.397.332

ANTONOV, A. A.

"Automodulators for Spiral Scanning"

Vopr. radiotekhniki -- V sb. (Problems of Radio Engineering -- collection of works), Tula, Tula Polytechnical Institute, 1970, pp 87-98 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G84)

Translation: A study is made of the possibility of obtaining the automodulation effect as a result of transient processes in linear circuits. A number of diagrams are presented as applied to spiral scanning.

1/1

USSR

UDC 621.391.82

TOLKALIN, L. N., ANTONOV, A. A.

"Selective Reception of a Complex Signal"

Vopr. radiotekhniki —Vsb.(Problems of Radio Engineering -- collection of works), Tula, Tula Polytechnical Institute, 1970, pp 105-112 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A94)

Translation: The probability of reception of a signal with Rayleigh amplitude distribution of the envelope and exponential distribution of the multiplicative clipped noise durations during selective reception for a finite time is determined. The problem of organizing the signal selections is investigated.

1/1

1/2 032 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THERMODYNAMICS OF IODIDES OF GERMANIUM HYDRIDE -U-

AUTHOR-(03)-ROMASHKO, B.V., ANTONOV, A.A., MASLOV, P.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 828-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--THERMODYNAMICS, IODIDE, GERMANIUM COMPOUND, HYDRIDE, THERMODYNAMIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0291 STEP NO--UR/0078/70/044/003/0828/0829

CIRC ACCESSION NO--AP0113221

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113221

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMODYNAMIC PROPERTIES OF MANY IODIDES OF GE HYDRIDE OF TYPE GEX SUB4, GEX SUB3 Y, GEX SUB2 Y SUB2, GEX SUB2 Y, GEXYZ (X, Y, Z EQUAL H, D, T, I) AS FUNCTION OF ABS. TEMP. AND PRESSURE CAN BE CALCD. FROM FORMULAS DERIVED BY THE METHOD REPORTED EARLIER (CA 64: 16715F; 66: 10467G). FORMULAS ARE GIVEN. THEY ARE VALID AT 250-1500DEGREESK (250-1000DEGREESK FOR C SUBPDEGREES) AT ANY PRESSURE, WITH AN ACCURACY OF 0.1-1.0PERCENT (0.2-2.0PERCENT FOR C SUBPDEGREES). IN ORDER TO USE THESE FORMULAS, IT IS NECESSARY TO KNOW THE MOLD. WT., LENGTH OF BONDS AND ANGLES BETWEEN THEM, AND SYMMETRY VALUES FOR EACH MOL. NUMERICAL DATA FOR COEFFS. USED IN THESE FORMULAS ARE GIVEN. FACILITY: LENINGRAD PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THERMODYNAMICS OF GASEOUS MIXED DEUTERIUM AND TRITIUM DERIVATIVES OF GERMANIUM HYDRIDE -U-

AUTHOR-(03)-ROMASHKO, B.V., ANTONOV, A.A., MASLOV, P.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 827-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--THERMODYNAMICS, DEUTERIUM, TRITIUM, GERMANIUM COMPOUND, HYDRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0294 STEP NO--UR/0078/70/044/003/0827/0828

CIRC ACCESSION NO--AP0113224

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0113224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CALCN. METHOD REPORTED EARLIER (CA 64 IS TO 16715F; 66 IS TO 10467X; 67 IS TO 57427G) WAS EMPLOYED FOR THE CALCN. AND TABULATION OF THERMODYNAMIC PROPERTIES OF ALL POSSIBLE D AND T DERIVS. OF GE HYDRIDES AS FUNCTION OF TEMP. AND PRESSURE. FORMULAS DERIVED ARE VALID AT 250-1500DEGREESK AT ANY PRESSURES, AND ARE ACCURATE WITHIN 0.1-1.0PERCENT, AND 0.1-2PERCENT FOR C SUBP. THESE FORMULAS CAN BE USED WITHOUT KNOWING EITHER THE VIBRATIONAL, OR ELECTRON AND ROTATIONAL CHARACTERISTICS. FACILITY: LENINGRAD. GOS. PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THERMODYNAMICS OF GASEOUS OXYGEN CONTAINING COMPOUNDS -U-

AUTHOR-(04)-BORISOV, M.I., KULAGIN, V.I., ANTONOV, A.A., MASLOV, P.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 826-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--THERMODYNAMICS, OXYGEN COMPOUNDS, THERMODYNAMIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0295 STEP NO--UR/0076/70/044/003/0826/0827

CIRC ACCESSION NO--AP0113225

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113225

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULAS ARE DERIVED FOR THE 1ST TIME WHICH CAN BE USED FOR THE CALCN. OF THERMODYNAMIC PROPERTIES OF 10 GASEOUS COMPDS.: HOX (X EQUAL D, T, AL, F), DOX (X EQUAL T, AL, F), TOX (X EQUAL AL, F), AND ALOF AS FUNCTION OF TEMP. AND PRESSURE. THEY ARE VALID AT 250-6000DEGREESK AND AT ANY PRESSURE AT WHICH A GIVEN GAS CAN BE CONSIDERED AS BEING IDEAL. THE ACCURACY IS 0.1-0.8PERCENT, AND 0.1-1.5PERCENT FOR C SUBPDEGREES. ALL VALUES ARE EXPRESSED IN CAL-MOLE-DEGREE. VALUES OF COEFFS. PRESENT IN THESE FORMULAS ARE TABULATED. FACILITY: LENINGRAD. GOS. PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--NEW EFFECTIVE METHOD FOR DERIVING SELF CONSISTENT FORMULAS OF THE TEMPERATURE AND PRESSURE DEPENDENCE OF THERMODYNAMIC FUNCTIONS -U-

AUTHOR-(02)-MASLOV, YU.P., ANTONOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 320-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--THERMODYNAMIC FUNCTION, PARAMETER, GEOMETRY, MIXED HALOGENATED ORGANIC COMPOUND, THERMAL EFFECT, CHLOROFLUOROCARBON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0331 STEP NO--UR/0076/70/044/002/0320/0324

CIRC ACCESSION NO--AP0103986

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103986

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFFS. IN THE EQUATIONS EXPRESSING TEMP. DEPENDENCY OF C SUBP DEGREES, HDEGREES, SDEGREES, AND GDEGREES AT 250-6000DEGREES K FOR A GROUP OF THE COMPDS. OF RELATED STRUCTURE CAN BE OBTAINED WHEN THE PARAMETERS DESCRIBING THE GEOMETRY OF MOLS. (LENGTHS AND BOND ANGLES, SYMMETRY NOS. SIGMA) ARE KNOWN. IF THE VALUES SDEGREES SUB298 AND HDEGREES SUB298 FOR A COMPD. OF THIS GROUP ARE AVAILABLE THE CALCN. CAN BE PERFORMED WITHOUT USING ITS GEOMETRIC PARAMETERS. VALUES OF SDEGREES AND GDEGREES FOR CCL SUB2 FBR, CH SUB2 CLI, CH SUB2, BRI, AND CH SUB2 FCL FOR 298-6000DEGREESK ARE TABULATED AND COMPARED WITH THE DATA OBTAINED BY USING THE METHODS OF STATISTICAL THERMODYAMICS.

UNCLASSIFIED

USSR UDC 532.5

ANTONOV, A. N. and BELOV, YU. A.

"An Approximate Method for Solving One Boundary-Value Problem, Describing the Flow of a Gas in the Case of Strong Blowing"

Kiev, Krayev, zadachi mat. fiziki (Boundary-Value Problems in Mathematical Physics, Collection of Works), 1971, pp 185-197 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4B462 by G. I. Maykapar)

Translation: The flow in the film of a gas sheet blown through a porous wall is considered for the case when the gas can be considered incompressible and nonviscous. The blown gas is separated from the basic flow by a contact surface, on which the pressure has no discontinuity. The problem leads to the solution of the Poisson equation for the flow function ψ, $\Delta\psi(x,y) = F(\psi)$ with boundary conditions $\psi(x,0) = \varphi(x)$, $\psi_y(x,0) = \gamma(x)$, $\psi(x,y)=0$, $\psi_x^2 + \psi_y^2 = 2p\rho = C$ on the surface of the separation. The right side of the Poisson is in the form of a power series of ψ; the solution is also in the form of a series. (English resume)

1/1

USSR UDC 533.601.15

ANTONOV, A. M. and KHOROSHILOV, O. V., Kiev State University

"Calculating the Gas Parameters in the Forced Air Region During the Flow Around a Porous Cone at an Angle of Attack"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR. Serija A: Fizyko-Tekhnichni ta Matematychni Nauki, No 1, 1973, pp 52-55

Abstract: Analyses of the results of the experimental and theoretical study of the phenomenon of intense, surface, mass transfer at high flight velocities of various bodies make it possible to draw conclusions as to the possibility of using injection as an effective means for changing such aerodynamic characteristics as drag and lift. From this point of view, intense forced air fed through a porous surface is very promising if the energy of the gas is sufficient to repulse the boundary layer. The authors study three-dimensional streamlining with forced air. The motion of a thin cone is studied at an angle of attack and with a gas of constant velocity being fed through its porous surface. As a consequence, the cone thickens, resulting in altered lift and drag. A full system of Euler differential equations with a spherical system of coordinates is used for calculating the field of flow in the forced gas region. The problem associated with streamlining a cone at the angle of attack α is solved by giving the unknown functions in the form of a small

USSR

ANTONOV, A. M., and KHOROSHILOV, O. V., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR. Serija A: Fizyko-Tekhnichni ta Matematychni Nauki, No 1, 1973, pp 52-55

parameter asymptotic series. This makes it possible to reduce the full system of Euler differential equations to a system of differential equations which are convenient for numerical integration. The numerical integration was carried out on a computer using the Runge-Kutta method. Graphs are given showing the results of the numerical calculations for various values, cone gap angles, and forced gas parameters. The results may be utilized for the analysis of the field of gas flow in the forced gas region on long cones. Original article: eight formulas, two figures, and five bibliographic entries.

2/2

USSR UDC: 533.69.01+533.662.013

ANTONOV, A. N., YERMOLENKO, M. S., MAKSIMENKO, L. A.

"Flow Around a Thin Wing With Escaping Jets"

Tr. II Resp. konf. po aerogidromekh., teplообmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey" (Works of the Second Republic Conference on Aerohydromechanics, Heat Exchange and Mass Exchange. "High-Velocity Aerodynamics" Section), Kiev, Kiev University, 1971, pp 165-167 (from Zh-Mekhanika, No 5, May 72, Abstract No 5B369)

Translation: In order to solve the problem of flow of an ideal compressible fluid around a thin wing of finite span from which jets are escaping, a system of discrete associated horseshoe vortexes and a system of free straight vortexes are substituted for the wing. The equation for the axis of a jet is given by some semi-empirical formula. The jet is broken down into individual sections, and a vortex strip with known intensity is substituted for each of these sections. The distribution of the load on the surface of the wing is determined from the condition of non-flow in the corresponding number of discrete computational points where the inductive velocities from the wing and jet vortex systems are calculated from the Biot-Savart formula. V. I. Putyata.
1/1

USSR 3 5 5 UDC 533.6[illegible]

Antonov, A. I., Iashinskiy, A. I. , Kiev State University

"Asymmetrical Triangular Plate With Blunt Edges in Hypersonic Flow"

Kiev, Dopovidi akademii nauk ukrains'koy RSR, fiziko-tekhnichni ta matematichni nauki, No 12, 1971, pp 1083-1086

Within the framework of the simplest two-layer scheme, the problem is solved for a hypersonic flow of gas past an asymmetrical triangular plate with blunt edges. The calculations confirm the accepted assumptions.

The divergent gas flow at small slip angles into the high-entropy layer near the flow velocity vector has a persistent influence on the distribution of parameters within the layer.

1/1

USSR UDC: 621.374.32(088.8)

ANTONOV, A. N.

"A Device for Isolating a Pulse Predetermined by Count"

USSR Author's Certificate No 265946, filed 26 Aug 68, published 1 Jul 70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G287 P)

Translation: This Author's Certificate introduces a device for isolating a pulse predetermined by count. The device contains series-connected counting decades with ten outputs each, and a multiple-input coincidence circuit in which each decade has a ten-position switch whose movable contact is connected to the corresponding input of the coincidence circuit, while the fixed contacts are connected to the outputs of this decade. To reduce the delay time of the output pulse, the switch in each decade of the counter except the last has an additional contact group whose movable contact is connected to the input for the following decade, while the fixed contacts are connected to the outputs of the decade commutated by this switch. The movable contact is shifted by one step with respect to the main contact group toward the higher number outputs.

1/1

Magnesium

USSR UDC 669.721.573

LEBEDEV, O. A., ANTONOV, A. N., MUZHZHAVLEV, K. D., and DAGNYAYEVA, O. N.

"Concerning the Mechanism of Magnesium Loss in Electrolysis"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 52-55

Abstract: An investigation was made to determine which of the two following interaction reactions taking place in the electrolysis of carnallite and magnesium chloride determines the magnesium losses: 1) The interaction of dissolved magnesium with dissolved chlorine, or 2) The interaction of Magnesium drops with gaseous chlorine. All tests were carried out with the so-called "potassium" electrolysis of the following composition (wt%): 15 $MgCl_2$, 65 KCl, 19.5 NaCl, and 0.5 NaF prepared from the magnesium chloride from the production of titanium and chemically pure salts. "Chemical" losses were determined according to a method described, with each test being repeated 2 or 3 times. The average results are presented in a table. Some of the tests were conducted in the electrolysis of the same "potassium" content, but with preliminary refining.

1/2

USSR

LEBEDEV, O. A., et al, Tsvetnyye Metally, No 10, Oct 70, pp 53-55

A comparison of "chemical" magnesium losses in refined and unrefined electrolysis makes it possible to approximately evaluate the losses caused by contact emission of impurities on magnesium drops, oxidation of dissolved magnesium on the electrolysis surface, and direct burning of magnesium. The experimental procedure and apparatus are described. Thermodynamic data on magnesium-chlorine interaction reactions and magnesium loss balance are given. The highest magnesium losses apparently occur in liquid magnesium-gaseous chlorine interaction.

2/2

Stress Analysis and Stability Studies

USSR UDC: 620.10

CHIZHOV, V. F., BOCHAROV, N. I., ANTONOV, A. S.

"Joint Deformation of Rings and Shells of Rotation with Arbitrary form of Generatrix"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 11, 1972, pp 5-11.

Abstract: The possibility of approximation of an arbitrary envelope of rotation by a system of 0-moment shells and rings was demonstrated in an earlier work. This work suggests that the solution produced earlier for a conical shell be extended to an envelope of rotation with arbitrary form of generatrix, which can be approximated by a finite number of truncated conical shells. The accuracy of approximation of the envelope of rotation by the truncated conical shells is related to the possibility of solution of the system of linear algebraic equations by computer. The problem of deformation of envelopes of rotation with arbitrary form of generatrix and rings under the influence of local stresses is studied. The envelopes is assumed to be a 0-moment envelope, the ring is deformed in its own plane. Calculations and experiments confirming the correctness of the method suggested are presented.

1/1

USSR UDC 543.70

TRONEVA, N. V., RENEV, V. K., SPITSYN, P. K., and [redacted], A. V., State Scientific Research and Planning Institute of the Rare Metal Industry, Moscow, State Committee for Ferrous and Nonferrous Metallurgy USSR

"Determination of Total Rare Earths and Yttrium in Industrial Solutions by the X-Ray Absorption Method"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 2, [illegible] 70, pp 378-380

Abstract: The authors devised and tested experimentally a new variant of X-ray absorption for testing industrial solutions used in the production of rare-earth elements.

Using a "Mineral-3" analyzer, they were able to determine yttrium on the basis of absorption jump, and total rare earths on the basis of the absorption coefficient for MoK$_{\alpha}$-radiation.

Data thus obtained did not differ by more than 3 - 5% from those obtained with the usual chemical means. The new method is equally advantage of being more rapid than the chemical method.
1/1

- 6 -

1/2 018 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--PSYCHOLOGICAL STUDY OF SOME FORMS OF INFORMATION PRESENTATION WITH ILLUSTRATIVE PURPOSES -U-

AUTHOR--ANTONOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--NAUCHNO TEKHNICHESKAYA INFORMATAIYA, 1970, SERIES 2, NR 2, PP 3-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--PSYCHOLOGIC TEST, INFORMATION THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1106 STEP NO--UR/0447/70/000/002/0003/0006

CIRC ACCESSION NO--AP0115125

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115125

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE OF THE SAME OBJECT MAY OFTEN BE REPRESENTED BY A DIAGRAM, A DRAWING, A TECHNICAL FIGURE, OR A PHOTOGRAPH. EXPERIMENTAL DATA SHOW THAT THESE FORMS ARE FAR FROM EQUIVALENT IN PSYCHOLOGICAL TERMS. A TEST BASED ON THE MEAN RECOGNITION TIME VALUES INDICATED THE FIGURE TO BE THE MOST EFFICIENT, AND THE TECHNICAL DRAWING THE LEAST ADVISABLE FORM. THE MINIMUM ERRORS WERE OBSERVED WITH PHOTOGRAPHS, THE MAXIMUM WITH DIAGRAMS. THE UNDERSTANDING OF THE PRESENTED INFORMATION WAS THE FULLEST WITH DRAWINGS AND THE WORST WITH DIAGRAMS.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF THE AMOUNT OF RARE EARTH ELEMENTS AN YTTRIUM IN INDUSTRIAL SOLUTIONS BY AN X RAY ABSORPTION METHOD -U-
AUTHOR-(04)-TRONEVA, N.V., RENEV, V.K., SPIRIN, P.K., ANTONOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 378-80

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--X RAY ABSORPTION, RARE EARTH COMPOUND, YTTRIUM, SOLUTION CONCENTRATION, NITRIC ACID, SOLUTION ACIDITY, X RAY ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1878 STEP NO--UR/0075/70/025/002/0378/0380

CIRC ACCESSION NO--AP0115697
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW MODIFICATION OF THE X RAY ABSORPTION METHOD FOR THE ANAL. OF INDUSTRIAL SOLNS., INTERMEDIATES OF RARE EARTH PRODUCTION, WAS DEVELOPED. THE METHOD PERMITS THE USE OF A SINGLE INSTRUMENT TO DET. THE TOTAL CONTENT OF THE RARE EARTH BY THE ABSORPTION COEFF. OF THE MO TARGET IRRADN. AND THAT OF Y BY THE ABSORPTION JUMP. IN HNO SUB3 SOLNS., PH HAS NO EFFECT ON THE SHAPE OF THE CALIBRATION GRAPH.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CIRCULATING WATER SUPPLY AND CORROSION OF APPARATUS -U-

AUTHOR-(03)-PETRENKO, V.G., ANTONOV, A.V., MALUKHINA, V.L.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM. 1970, (5), 49-53

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CORROSION, PHOSPHATE, RIVER WATER, COKE, CHLORINATION, PITTING CORROSION, WATER PURIFICATION, BIOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1211 STEP NO--UR/0068/70/000/005/0049/0053

CIRC ACCESSION NO--AP0138226

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0138226
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WATER SUPPLY SYSTEM OF A COKE CHEM. PLANT AND METHODS OF PURIFYING THE CIRCULATING WATERS (FILTERS FOR REMOVING SUSPENDED MATTER, PHOSPHATE TREATMENT, CHLORINATION) ARE DESCRIBED. THE CORROSION ACTIVITY OF THE VARIOS WATERS WERE DETD. UNDER INDUSTRIAL AND LAB. CONDITIONS. THE SEVEREST CORROSION WAS FOUND WITH CIRCULATING AND WITH RIVER WATER, SERIOUS PITTING BEING OBSD. WATER TREATED BY BIOCHEM. METHODS IS LESS CORROSIVE THAN RIVER WATER. FOR THE FINAL COOLING OF GASES, COOLING WATER COMPOSED OF CIRCULATING WATER IN AMT. FOR SYSTEM MAKEUP TOGETHER WITH RIVER WATER TREATED BIOCHEM. AFTER FILTER TREATMENT TO REMOVE THE SUSPENDED MATTER IS REVOMMENDED. REDN. OF RIVER WATER ADDN. INTO THE CIRCULATING COOLING WATER SYSTEM CAN BE ACHIEVED BY USING WASTE WATER FOR BIOCHEM. PURIFICATION. FACILITY: ORSKO-KHALILOVO MET. KOMB., USSR.

UNCLASSIFIED

USSR UDC: 621.373.531(088.8)

SAKOVICH, A. A., ANTONOV, B. M., ANDRZHEYUK, G. V.

"A Pulse Generator"

USSR Author's Certificate No 269992, filed 14 Aug 67, published 4 Aug 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G210 P)

Translation: This Author's Certificate introduces a pulse generator based on a bridge circuit. The device includes a capacitor, resistors and a thyristor. To ensure high stability of the pulse repetition period over a wide frequency range, a semiconductor diode with charge accumulation and the primary winding of a controlling pulse transformer are connected in series in the diagonal of the bridge. The secondary winding of the transformer is connected to the control electrode and the cathode of the thyristor.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--VULCANIZATION OF BUTADIENE STYRENE AND BUTADIENE NITRILE RUBBERS BY P QUINONE DIOXIME -U-

AUTHOR-(02)-ANTONOV, B.N., ZHAVORONOK, S.G.

COUNTRY OF INFO--USSR

SOURCE--KAUCH, REZINA 1970, 29(5), 13-15

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, BUTADIENE STYRENE RESIN, NITRILE RUBBER, CARBON BLACK, OXIME, VULCANIZATE, TENSILE STRENGTH, ELONGATION, PHTHALIC ANHYDRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0978 STEP NO--UR/0138/70/029/005/0013/0015

CIRC ACCESSION NO--AP0139006

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VULCANIZATION OF BUTADIENE STYRENE RUBBERS OR BUTADIENE NITRILE RUBBERS CONTG. 50 WT. PARTS CARBON BLACK WITH P QUINONE DIOXIME (I) INSTEAD OF S GAVE IMPROVED VULCANIZATES. THE TENSILE STRENGTH AT BREAK (SIGMA) OF SUCH RUBBERS IS SMALLER THAN OR EQUAL TO 400 KG-CM PRIME2 AND THE ELONGATION AT BREAK (EPSILON) IS SMALLER THAN OR EQUAL TO 600PERCENT, WHILE THE RUBBERS VULCANIZED WITH S HAVE SIGMA AND EPSILON 270 KG-CM PRIME2 AND 550PERCENT RESP. I TENDS TO INCREASE SCORCHING, BUT THE ADDN. OF PHTHALIC ANHYDRIDE SOFTENERS ALLEVIATED THE PROBLEM. FACILITY: LENINGRAD. FILIAL NAUCH.-ISSLED. INST. REZIN. PROM., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 533.6.011

ANTONOV, E. A., GLADILIN, A. M., Leningrad

"Intensification of a Detonation Wave by the Secondary Reaction Zone in a Two-Phase Medium"

Moscow, Mekhanika zhidkosti i gaza, No. 5, Sep/Oct 72, pp 92-96

Abstract: A method is proposed for the numerical calculation of one-dimensional nonstationary flows of gas-particle mixtures. The method is based on separating the system of differential equations for the two-phase medium into two subsystems. The purpose of the study was to show under what conditions the intensification of a detonation wave by secondary reactions is possible within the framework of the model used and to obtain a picture of the flow behind the front. The problem of the propagation of a plane detonation wave in a mixture of a detonating gas with particles, behind the front of which there occurs secondary chemical reactions between vapors of particle material and detonation products, is solved by this method. The velocity profiles of the gas and of the thermodynamic functions behind the front of the detonation wave are determined along with the relationship between the detonation rate

USSR

ANTONOV, E. A., GLADILIN, A. M., Mekhanika zhidkosti i gazn, No. 5, Sep/Oct 72, pp 92-96

and the distance from its point of initiation. Conditions for intensification of the detonation wave by the zone of the secondary reaction are obtained. The reaction selected as the reaction for achieving primary detonation in the numerical experiment was the reaction between hydrogen and oxygen

$$H_2 + {}^1/_2\, O_2 \rightarrow H_2O + q. \qquad (1.1)$$

The detonation was triggered from the wall and propagated to the right with constant velocity D_0 until its front overtakes the perturbations coming from the zone of the secondary chemical reaction. It is assumed that the secondary chemical reaction of vapors of particles consisting of the element A with detonation products proceeds as follows:

$$A_2 + H_2O \rightarrow A_2O + H_2 + Q. \qquad (1.2)$$

Since the calculation of specific systems was not the purpose of this paper, the element A was taken as arbitrary and for simplicity its atomic weight was taken so that the average molecular weight of the gas in the process of evaporation and reaction was constant. An element with atomic weight equal to 9 satisfies this for reaction (1.1) and (1.2). The authors examined a considerable number of variations of the problem in which the particle radius and the thermal effect of the secondary reaction varied from $2.5 \cdot 10^{-6}$ to $5 \cdot 10^{-5}$ m and from 100 to 300 kcal/mole, respectively. It was found that

USSR

ANTONOV, E. A., GLADILIN, A. M., Mekhanika zhidkosti i gaza, No. 5, Sep/Oct 72, pp 92-96

particles of radius more than 10^{-5} m even for Q = 300 kcal/mole could not increase the velocity of the detonation wave under the condition that mass exchange occurred only due to evaporation.

Refractory Materials

USSR UDC 666.764.62

ANTONOV, G. I. and YAN'SHINA, A. P., Ukrainian Scientific Research Institute of Refractories, and ZUBAKOV, S. M., and MENZHULINA, F. M., Institute of Metallurgy and Ore Dressing of the Academy of Sciences Kazakh SSR

"Periclase-Spinel Refractories Made of Natural-Brine Magnesium Oxide and Concentrated Chromite"

Moscow, Ogneupory, No 9, 1971, pp 35-40

Abstract: Periclase-spinel refractories made of pure materials (brine magnesium oxide and kimpersayskiy chromite) are compared with the corresponding refractories made of ordinary-grade magnesium oxide and chromite. Experimental articles fabricated in the test comparison were 230 x 115 x 65 mm in size and were molded on a hydraulic press at a pressure of 1200 kg/cm^2. For articles made from ordinary grade materials, silicate impurities were found to clearly affect compaction. In contrast, a high temperature for the onset of deformation under load (upwards of 1750°) was found to characterize articles made of brine magnesium oxide and concentrated kimpersayskiy chromite. These articles showed less linear (at a load of 2 kg/cm^2) and less additional (10 hr at 1750° exposure) shrinkage. The microstructure of articles made from pure materials showed a sizable fraction of periclase bonds not through silicates, but across secondary spinel. Two illustrations; six tables.
1/1

USSR

UDC: 632.954

ANTONOV, G. N., Ministry of the Chemical Industry

"Some Ways to Reduce the Danger of Pesticides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 5, 1973, pp 33-34

Abstract: The article briefly describes the restrictions on the use of various pesticides in the Soviet Union. Hazards of highly poisonous pesticides are reduced by definite specifications as to which chemicals can be used on what crops, and by deadlines as to the last crop treatment before harvest. This "waiting time" is said to be the longest in the Soviet Union, and it is further stated that the tolerable residue of pesticides is lowest. Mention is made of research on reducing the toxicity of pesticides for humans and warm-blooded animals, while simultaneously increasing their effectiveness against pests, and also on ways to apply pesticides.

1/1

Antonov, I.I.

HUMAN SKIN THERMOTOPOGRAPHY AND BODY TEMPERATURE DURING PROLONGED EXPOSURE IN A HYPERCAPNIC ATMOSPHERE AT NORMAL AND REDUCED BAROMETRIC PRESSURE

/Article by I. R. Abramov, I. I. Antonov, and [illegible] T. Gurina; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 321-323/

It is known that under real flight conditions it is not impossible that in small cabins there may be an accumulation of CO_2 which forms in the metabolism process. Accordingly, in order to develop reliable means for protecting the members of flight crews during real flight it is exceedingly important to know the influence of CO_2 on the human body in general and its temperature in particular.

We studied the temperature of 12 subjects using a CO_2 concentration from 3 to 6% at normal and reduced barometric pressures corresponding to an altitude of 5,000 m. We studied the skin temperature by the Bekotov method (1962) and rectal temperature.

Analysis of thermometric data revealed that in experiments conducted at normal barometric pressure and 3% CO_2 the skin and rectal temperatures during the first two days were within the limits of physiologic variations. Beginning with the third day there was an intensive increase in skin temperature primarily in the region of the distal parts of the extremities in the range [illegible]^{o}. At the same time there was a temperature increase in the rectum in the range 0.7-1.3^{o}. With 4% CO_2 in the surrounding medium there were no qualitatively different shifts in heat regulation in comparison with the preceding experiment. However, an analysis of the absolute changes in temperature made it possible to note that in this case the increase in rectal temperature was somewhat less (0.4-0.5^{o}). In a 5% hypercapnic medium the skin temperature

JPRS 56,499
14 JULY 72

ANTONOV, I. I.

CHARACTERISTICS OF HUMAN GAS EXCHANGE IN A HYPEROXIC GAS MEDIUM AT NORMAL ATMOSPHERIC PRESSURE AND AT DIFFERENT AMBIENT TEMPERATURES

/Article by I. I. Antonov and [illegible]; Moscow, [illegible] nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp [illegible]-325/

The problem of human heat exchange in a hyperoxic gas medium, occupying an important place in aviation and space medicine, is covered in individual studies of both Soviet and foreign researchers ([illegible] and [illegible]-Freiberg, [illegible]; N. A. Agadzhanyan, et al., [illegible]).

In our investigations we devoted particular attention to thermoregulatory shifts in the human body during hypoxia at different ambient temperatures.

The investigations were made in an oxygen tent in which the oxygen concentration was increased to [illegible]. Temperature was maintained in the ranges 3-[illegible], [illegible]-20° and [illegible]-40°C. The relative humidity was 63-70%.

Heat production was studied by the [illegible] method (1953), skin and rectal temperature by the [illegible] method (1962) and heat transfer by the Livanov method (196[illegible]).

The results of these investigations revealed that under thermally neutral conditions during the first four hours of exposure in a hyperoxic medium there is a small increase in heat production by 12-15% in comparison with the initial level. Later it begins to decrease gradually, attaining a maximum by the end of the first day. Under cold conditions the intensity of heat production during the first hours was more clearly expressed and was 35-39% in comparison with the initial level. Later it remained at the same level to the end of the experiment. A completely different picture was [illegible]

JPRS 56,499
14 July 72

17

USSR

UDC 612.5-06:[612.822.8+612.273.1

ANTONOV, I. I.

"Effect of Electrostimulation of the Hypothalamus and Cerebral Cortex on Temperature Homeostasis in Rabbits Under Hyperoxic Conditions"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1971, pp 27-31

Abstract: In the first stage of the effect of exposure to oxygen at high pressure, electrostimulation of the anterior hypothalamus lowered the temperature of the liver, rectum, and skeletal muscles but elevated that of the ear and back skin. Stimulation of the posterior hypothalamus, however, elevated the temperature of the rectum, liver, and skeletal muscles while lowering that of the skin. In the second or pretoxic stage of the oxygen effect, stimulation of the anterior hypothalamus had no effect on the temperature of the various organs and tissues, whereas stimulation of the posterior hypothalamus lowered the temperature of the skin but elevated that of the rectum, liver, and skeletal muscles. In the third or toxic stage, stimulation of the anterior hypothalamus slightly elevated the temperature of the skeletal muscles and skin but sharply lowered that of the rectum and liver. Electrostimulation of the cortex in the region of the sigmoid gyrus elevated the

1/2

. USSR

ANTONOV, I. I., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1971, pp 27-31

temperature of the liver and skeletal muscles in the first stage of the oxygen effect, inhibited the development of hypothermia in the second stage, and had no clear-cut effects in the third.

USSR

UDC 616.853+612.53+612.81+612.822.3

ANTONOV, I. I., Institute of Biomedical Problems, Ministry of Health USSR

"Trigger and Neurochemical Mechanisms of Thermoregulation During Hyperoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 1, 1971, pp 245-247

Abstract: Experiments on rabbits (some of whom received chlorpromazine) showed that hyperoxia under conditions of normal or increased barometric pressure raises the temperature in various brain structures (stage 1), lowers it slowly (stage 2) and then more rapidly (stage 3). The mechanism that triggers the thermoregulatory reaction is change in the temperature optimum induced reflexly in stages 1 and 2 of exposure to oxygen. The receptors of the respiratory system are the first link and those of the vascular system the second. This two-link system of excitation of the thermoregulatory centers operates successively and one link does not substitute for the other. The progressive hypothermia in stage 3 is probably caused by direct injury to the nerve cells by the oxygen. The changes in the temperature of the cortex, posterior hypothalamus, and reticular formation after the administration of chlorpromazine in stages 1 and 2 of hyperoxia were mediated through the adrenergic substrate of the brainstem. However, preservation of the ordinary temperature dynamics in the anterior hypothalamus and its distortion after the administration of chlorpromazine

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200210008-6"

USSR

ANTONOV, I. I., Doklady Akademii Nauk SSSR, Vol 199, No 1, 1971, pp 245-247

indicate that the cholinergic component is also involved in the temperature changes that occur in the subcortical structures under hyperoxic conditions.

2/2

USSR UDC: 681.2.087.92-932

VAYKSHIN, L. A., ANTONOV, I. I., SYCHUK, V. M.

"A Pneumoelectric Converter"

USSR Author's Certificate No 253436, filed 22 May 67, published 25 Feb 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A139 P)

Translation: This Author's Certificate introduces a pneumoelectric converter which contains a device for pneumatic signal input and a piezoelectric element. To improve sensitivity and increase the repetition frequency, the device includes a pneumatic pulse generator (fluid relay). For purposes of inverse conversion, the controlling channel of the generator is connected to an intermediate nozzle-tube element. Supply air is continually fed to the fluid relay. When the signal being monitored arrives at the input as $P_{in}=1$, the air jet in the relay is deflected to channel b, where it acts continuously on the piezoelectric element. In this case there is practically no signal across the output of the piezoelectric element. When the input signal disappears, the jet is deflected to channel c where it enters a pneumatic capacitor. There is an abrupt change in the load on the piezoelectric element, which generates the first electric signal. As soon as the pneumatic capacitor is filled with air to a given pressure, the jet in the relay is

1/2

USSR

VAYKSHIN, L. A. et al. USSR Author's Certificate No 253436

deflected once more to channel b, and the piezoelectric element generates a second signal. The capacitor is dumped and the jet is automatically deflected to channel c. In this way, pneumatic and electric pulses are generated at the output. Generation is interrupted when the input signal arrives as $P_{in}=0$. Two illustrations. N. S.

2/2

USSR UDC: 519.21

ANTONOV, I. L.

"Transient Process in a Two-Dimensional Extremum System in the Presence of Forbidden Regions and a Random Search Method"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 69-80 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V402)

Translation: The paper deals with the behavior of a two-dimensional extremum system in which a stochastic modification of the Gauss-Seidel method is taken as the search procedure. The average time needed by the system to reach the periphery of the extremum in the presence of bounded forbidden regions is found. Author's abstract.

1/1

USSR

UDC 536.24

ANTONOV, I. N., SHEYNESSON, A. S., BARSKIY, M. L.

"Role of Radiant and Convective Components in the Heat Exchange of Radiometers"

V sb. Prikl. i teor. fizika. Vyp. 3 (Applied and Theoretical Physics. No. 3 -- Collection of Works), Alma-Ata, 1972, pp 257-262 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B914)

Translation: Methods, computational results and a comparative evaluation of the radiant, convective, and total coefficients of heat exchange of the surfaces of a radiometer of cylindrical shape are discussed. The results make it possible to determine the average heating of the instrument relative to the surrounding medium and to evaluate the role of radiant and convective components in the total balance of heat exchange under various meteorological conditions. Detailed quantitative characteristics are given. Authors' abstract.

1/1

USSR

UDC 547.261'18'17'13:543.422.25

ZELENEVA, T. P., ANTONOV, I. V., and STEPANOV, B. I., Moscow Chemical-Technological Institute Imeni D. I. Mendeleyev

"PMR Spectra of Alkoxy- and Arylalkoxysubstituted Cyclotriphosphazatrienes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (105), No 5, May 73, pp 1007-1010

Abstract: Reacting hexachlorocyclotriphosphazatriene with propyl, butyl, benzyl and phenethyl alcohols gave cyclophosphazatriene acid esters with the general formula $N_3P_3(Cl_{6-n}OR)_n$ where n = 1,2,3,6 for R = Bu, and n = 3,6 for R = Pr, CH_2Ph, and CH_2CH_2Ph. These products were studied by PMR spectroscopy. It was shown that these compounds exhibit a virtual remote spin-spin split. It was possible to establish geminal and nongeminal structures of the substituted phosphazatrienes by means of PMR spectroscopy.

1/1

USSR

UDC 624.073.012.35.04

ANTONOV, K. K., ROGATIN, YU. A., Moscow

"On Calculating Fastening Beams of Reinforced Concrete Plates Supported on an Elastic Contour"

Moscow, Stroitel'naya mekhanika i raschet sooruzheniy, No. 3, 1972, pp 26-29

Abstract: A method is presented for determining support reactions and forces in elastic fastening beams of reinforced concrete square plates supported over a contour loaded with a uniformly distributed statistical load. The studies showed that the nature and magnitude of support reactions and forces in elastic binding beams of reinforced concrete plates supported over a contour are functions of a computational parameter γ, the coefficient of relative rigidities of the system. This parameter is recommended for use in calculating beams under elastic operation of a plate-contour system and in cases of operating with a plate with cracks. The formulas are compared with experimental results and are illustrated by examples.

1/1

USSR

ANTONOV, I. M., and GASTEVA, S. V., Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Intensity of Metabolism of Phospholipids of the Brain and Liver of Rats in Histotoxic Hypoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1,229-1,231

Abstract: It has been established that hypoxia produced by lowering of the partial O_2 pressure in the surrounding atmosphere depresses the phospholipid metabolism of rat brain tissue. A study was made of the effects on phospholipid metabolism of histotoxic hypoxia produced by giving rats 7 mg/kg KCN. This dose, resulting in death of 20% of animals, was equivalent in lethal effect to a 2 hr sojourn of rats in a chamber with a pressure of 180-200 mm. Phospholipid metabolism was studied by determining the radioactivity of tissues upon administration of Na orthophosphate labeled with P^{32}. In rats exhibiting no significant shifts in body temperature under the effect of KCN, the phospholipid metabolism in brain tissue was lowered by 35%. Lowering of the body temperature under the effect of KCN (which amounted to 4.8°C on the average) resulted in a reduction of phospholipid metabolism of the brain by 53.8%. Keeping the poisoned rats in a refrigerator (so that their

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200210008-6"

USSR

ANTONOV, L. M., and GASTEVA, S. V., Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1,229-1,231

body temperature was reduced by 12.3°C) depressed the phospholipid metabolism of the brain by 69.9%. Depression of the phospholipid metabolism in liver tissue of poisoned rats amounted to 24.5 and 38% upon reduction of body temperature by 4.8° and 12.3°C, respectively, whereas the effect of KCN alone, without reduction of body temperature, did not lower the phospholipid metabolism in this tissue.

2/2

USSR

SIMONOV, V. D., NEDEL'CHENKO, B. M., KOGAN, L. M., ANTONOV, L. T., BURMAKIN, H. M.

"The Problem of Industrial Production of Mucochloric Acid"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 334-338. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N683 by T. A. Belyeva).

Translation: A continuous technological process has been developed for the production of mucochloric acid by the reaction of oxidative chlorination of furfural (I) with the optimal parameters: molar Cl_2:I=5.6:1, specific productivity of reactor 80 kg/m^3·hr, volumetric ratio of I to circulating solution: 0.1-0.15, temperature 95-100° (maintained by heat of reaction), yield 80-82%. For fine dispersion, the Cl_2 is passed through teflon bubblers with 1 mm diameter apertures. A diagram of the process is presented.

1/1

USSR

UDC 621.382.323-416

ANTONOV, M.I., STEPANOV, I.V.

"Analysis Of The Noise Parameters In The Ultrashort Wave Band Of MIP Transistors Based On Aluminum Nitride"

Elektron.tekhnika.Nauch.-tekhn.sb. Upr. kachestvom i standartiz. (Electronics Technology. Scientific-Technical Collection. Quality Control And Standardization), 1971, Issue 1(7), pp 104-109 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11B264)

Translation: A method is considered which makes it possible to calculate the noise factor of a field-effect transistor of MIP [?metal-insulator-semiconductor] structure in all the range of operating frequencies, with respect to noise parameters measured experimentally at some fixed frequency. The equivalent resistance of the noise R_n characteristic of shot noise (makes the principal contribution at frequencies $<$ 30 MHz) and the equivalent noise conductivity G_n connected with induced noise (furnishes principal source of noise at frequencies $>$ 30 - 100 MHz) are used as parameters dependent on frequency. The relation obtained between the noise factor and R_n and G_n makes it possible to calculate the noise factor at any frequency if the values of R_n and G_n are known at one or several frequencies. The correctness of the conclusion stated was confirmed experimentally, by a comparison of the calculated and measured noise factor of a high-frequency transistor of MIP structure with an induced p-channel and a

1/2

USSR

ANTONOV, M. I., STEPANOV, I. V., Elektron. tekhnika. Nauch.-tekhn.sb. Upr. kachestvom i standartiz. (Electronics Technology. Scientific-Technical Collection. Quality Control And Standardization), 1971, Issue 1(7), pp 104-109 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11B264)

dielectric film based on aluminum nitride between the gate and channels; the calculated and measured magnitudes correspond with an average deviation of 15 percent. 2 ill. 12 ref. V.Ya.

2/2

ANTONOV, N. I.

3 rys 5/0 63
6, 73

III-8. CHARACTERISTIC FEATURES OF THE GROWTH OF SINGLE GERMANIUM CRYSTALS

[Article by N. I. Antonov, G. V. Sachkov, D. I. Levinzon, A. V. Stepanov, Physicotechnical Institute imeni A. F. Ioffe of the USSR Academy of Sciences, Leningrad: Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 32]

When growing shaped single crystals by the Stepanov procedure, a close relation is observed between the shape of the melt column, the thermal field in the crystal and the melt column and the crystallographic orientation of the crystal. As the practice of growing shaped single crystals demonstrates, the configuration of the seed crystal is not the shape forming factor. The final form of the crystal is determined by the outline of the shape forming hole and the position of the crystallization front. However, in the initial growth stage, the shape of the seed crystal is realized both for shaping the melt column and for the thermal fluxes through the crystal-melt interface.

The presence of octahedral planes capable of severe faceting changes the shape of the crystallization front and the shape of the melt column. It turns out that the structural and electrical properties of germanium single crystals depend to a strong degree on the above indicated crystallization parameters.

When growing monocrystalline rods of germanium from 2 to 10 mm in diameter and with orientations of <100>, <110>, <111>, <211>, <221>, <321>, the degree of faceting of the single crystals varies from 90 to 5 percent. Controlling the crystallization parameters (the thermal field of the melt column and the crystal, the shape of the melt column), it was possible to obtain monocrystalline rods of germanium with a class 12 surface finish. The dislocation density in them was from 1-10 to 10^3 cm^{-2}.

The distribution of the alloying admixtures in shaped single crystals in the general case is subject to the same laws as are observed when growing single crystals from a melt. However, when growing sharply alloyed single crystals by the Stepanov procedure, there is no long-period banding or short-period stable banding. The presence of the embossing device permits a significant decrease in the intensity of the growth bands.

USSR UDC 621.372.852.3

ANTONOV, N. N.

"A Microstrip Phase Inverter of Feed-Through Type on a Nonlinear Dielectric"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute), 1971, vyp. 92, pp 55-58 (From RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B181)

Translation: The author considers a phase-shifting unit which consists of a section of microstrip line in which two planar capacitors based on ferroelectric ceramic film of (Ba, Sr)TiO_3 are connected in series. An inductance in the form of a short-circuited loop based on a strip line is connected in parallel to the common point of the capacitors; the width of the strip line is considerably less than a wavelength. Six illustrations, bibliography of two titles. N. S.

1/1

USSR UDC: 621.372.852.2(088.8)

ANTONOV, N. N., VENDIK, O. G., DAKHNOVICH, A. A., MIRONENKO, I. G., Leningrad Electrical Engineering Institute

"A Capacitive Phase Shifter"

USSR Author's Certificate No 261493, filed 2 Dec 68, published 28 May 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B212 P)

Translation: The proposed capacitive phase shifter contains a strip line and controllable capacitors based on a nonlinear dielectric. To keep phase displacement constant over a wide temperature range, the phase shifter is made in the form of a series circuit of capacitors connected in a break in the central conductor of the line. One illustration.

1/1

Acc. Nr: AP0045002 Abstracting Service: 5/70 Ref. Code: UR0109
INTERNAT. AEROSPACE ABST.

A70-22409 **Correlation functions and spectra of oscillations modulated in amplitude, phase, and frequency by random processes (Korreliatsionnye funktsii i spektry kolebanii, modulirovannykh po amplitude, faze i chastote sluchainymi protsessami).** O. E. Antonov and I. A. Plotnikov. *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 84-91. In Russian.

Derivation of a formula for the correlation function of an oscillation which is simultaneously modulated in amplitude, phase, and frequency by random stationary normal processes having an arbitrary degree of mutual correlation. For specific forms of modulating processes, calculations are made of the spectra of oscillations modulated in only two of three parameters (amplitude and phase, amplitude and frequency, and phase and frequency). It is shown that the presence of correlation between the modulating processes shifts the spectral density maximum away from the carrier frequency.

T.M.

1/1 ACS 4

REEL/FRAME
19771898

USSR

UDC: 621.43.001.3

ANTONOV, O. G., DOLINSKIY, D. V., MARCHEVSKIY, V. P., MEL'NICHENKO, R. M., OTSECHKIN, Yu. G., PAVLENKO, G. V., TOVKANETS, V. Ye., SARANTSEV, K. B., Institute of Automation, Khar'kov Polytechnical Institute

"An Antistall Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335444, Division F, filed 21 Sep 70, published 11 Apr 72, p 140

Translation: This Author's Certificate introduces an antistall device which may be used for controlling centrifugal compressors. The device contains pickups for the rate of flow and pressure drop across the compressor, an amplifying adder and a regulating valve installed on a bypass line between the pressure and suction channels. As a distinguishing feature of the patent, in order to improve the reliability and accuracy of maintaining the limiting flow rate, a pickup is connected to the amplifying adder which measures the difference in pressures between the wake and kernel of the flow behind the vanes of the exit guide cone to correct control in accordance with variation of the static characteristic of the compressor.

1/1

USSR

UDC: 53.082

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., LEVINZON, D. I.

"A Device for Measuring the Resistivity of Single Crystal Rods by a Noncontact Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 601-602

Abstract: A device is proposed which uses a noncontact capacitance method for checking the volumetric distribution of resistivity in cylindrical germanium specimens. The measure of resistivity is the amplitude of the voltage taken off from a measurement loop into which the study specimen is introduced through capacitive electrodes. In the proposed device, the measurement results are made more reliable by providing for automatic tuning of the measurement loop to resonance with the supply generator by adding a correcting variable capacitor with the rotor mechanically connected to one of the coupling electrodes. A comparison of measurement results with data obtained by the two-probe method shows a deviation of no more than ±10%. The repeatability of the device as evaluated by the coefficient of variation of repeated measurements at a single point was less than 1%.

1/1

USSR

UDC 53.082

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., LEVINSON, D. I.

"Device for Measuring the Specific Resistance of Shaped Single Crystals by a Contactless Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972, pp 601-602

Abstract: The application of contactless methods to control the specific resistance of shaped single crystals of different geometries is discussed. It is noted that the application of the contactless capacitance method to control the distribution of the specific resistance over cylindrical single crystals of small diameter not only raises the speed of measurement but makes it possible to avoid losses of costly materials associated with the surface treatment of crystals in probe measurements. The essence of the method is that the voltage amplitude taken from a measuring circuit, into which the sample is introduced through capacitance connecting electrodes, serves as a measure of the specific resistance. A necessary condition for obtaining reliable results has been tuning the measuring circuit to resonance with the generator supplying this circuit, this is ultimately achieved by changing the capacitance of the connection between the electrodes and the sample being studied. This article

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200210008-6"

USSR

KUSHCH, V. V., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972, pp 601-602

describes a device which makes it possible to avoid the operation of manual tuning of the capacitance of the connection by introducing a variable correcting capacitor into the circuit, the rotor of which is mechanically connected with one of the connecting electrodes. A diagram and description of the device are given. The measuring properties of the device were evaluated on industrial cylindrical germanium single crystals of diameter 8-9 mm, and the measurements obtained by the contactless method coincide with an accuracy of $\pm 10\%$ with measurements obtained by the two-probe method.

2/2

USSR

UDC 666.764.32.041.9

ANTONOV, S. A., PITAK, N. V., and ZHUKOVA, Z. D., Ukrainian Scientific Research Institute of Refractory Materials

"Sintering of a Mullite-Corundum Briquette in Oxidizing and Reducing Media"

Moscow, Ogneupory, No 3, 1973, pp 24-27

Abstract: Investigation results are presented of the sintering of a mullite-corundum briquette in oxidizing and reducing media. Crude technical GA85 alumina and PLKO kaolin were used as initial materials for specimens 20 mm in diameter and 24 mm high, subjected to heat treatment with 2 hrs aging at 200-1700°C at 100-200°C intervals. The weight loss, change in volume, water absorption, and compressive strength, determined after each experiment in both media, are discussed. An intensive sintering was found to proceed in the 1400-1600°C temperature interval. The sintering rate at 1200-1400°C is higher in a reducing medium than in an oxidizing medium, due to the formation of a significant amount of liquid phase. At temperatures higher than 1400°C, the SiO_2 reduction process increases and volatile silicon monoxide develops, which prevents a sintering of the briquette. Five figures, one table, four bibliographic references.

1/1

ANTONOV, S. N.

physiology

SOV/PRS 53448
24 JUNE 71
UDC 612.812-06:612.13

DEPENDENCE OF INTENSITY OF PROPRIOCEPTIVE AFFERENTATION ON REGIONAL CIRCULATION

[Article by V. I. Savchuk and S. N. Antonov, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, vol 5, No 2, 1971, pp 87-88, submitted for publication 24 December 1969]

Acute experiments on 52 cats under chloralose-urethane narcosis were used in investigating the bioelectric activity of thin bundles of afferent fibers in the muscular branch of the femoral nerve innervating the intermediate head of the quadriceps femoris under conditions of a controlled level of muscular circulation. The latter was achieved by perfusing a muscle from a donor, humorally isolated in situ, over sufficiently prolonged periods.

Judging from the experimental results, the activity of proprioceptive afferentation is determined to a considerable degree by the level of organic circulation. In a study of rigorously isolated groups of afferent fibers it was found that the greater the level of muscle circulation, the more intense is the spontaneous impulsation and the activation reaction to muscle dilatation by weights. The setting in and maintenance of perfusion pressure at intermediate and low levels (in comparison with a certain initial level) results in a proportional decrease in the afferent flux intensity. Such a dependence is not observed only in individual experiments.

Analysis of the collected data indicates that the flux intensity of spontaneous impulsation when the arterial pressure is 120 mm in two or three times greater than the level of spontaneous activity when the arterial pressure is 20 mm and corresponds to the intensity of the afferent flux which arises with muscle dilatation by a weight of 50 g when the arterial pressure is 20 mm.

The similar dependence of afferent impulsation detected in a study of very thin filaments including one or two functioning fibers makes it possible to assume that the level of organic circulation also determines the level of functional activity for each receptor. A high organic circulation level corresponds to activation of the proprioceptors. This pertains to spontaneous

S/019/61/000/024/001/[illegible]
A156/A126

AUTHORS: Kerel'shteyn, B. L., Antonov, S. P., Kozhevnikov, V. P., Reyzin, N. [illegible] Fotev, A. N., Dayker, A. L., Tomas, I. V., Zolotov, V. I., Gerasyev S. V., Alfeyev, I. I.

TITLE: Flame dressing machine for hot metal flowing through reducing mills

PERIODICAL: Byulleten' izobreteniy, No. 24, 1961, 11

TEXT: Class 7a, 27_{01}. No. 143364 (724914/22-2 of March 31, 1961). 1. A flame dressing machine for hot metal flowing through reducing mills, the distinctive feature of which consists in that for the purpose of improving its operational qualities and reliability, for increasing its output and simplifying control, it is equipped with combined pneumatic-hydraulic drives for equibalancing and moving the cross-beams which carry supports with gas cutting heads, for balancing the lateral heads, synchronizing their travel, fixing them as regards height, and also for controlling the automatic noncontact servomechanism of the cutting units. 2. A machine as in 1, where for the purpose of automating its operation in the rolling mill train, the lateral heads of the gas cutting units are self-setting and simultaneously engage the required number of cutting torch sections, depending on the thickness of the metal being dressed.

Card 1/1

1

USSR

UDC: 53.07/08+53.001.5

FEDOROV, G. A., SLAVYAGIN, P. D., MOISEYEV, I. F., ANTONOV, V. A., ZGURGANOV, S. V.

"Using the Geometry of Linear and Spiral Scanning in Human Radiation Spectrometers"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 173-178 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A714)

Translation: A study was made of the spatial effectiveness of registration of gamma quanta by a human radiation spectrometer as a function of the energy of the isotopes utilized by the detector, the length and height (or radius) of scanning, and the region of the recorded spectrum for linear and spiral scanning geometries. M. L.

1/1

USSR

UDC 621.385.002.72:061.3

ANTONOV, V. A., ed.

"Progressing Technology and New Equipment for Production of Electron Devices. Materials Of a January 1970 Scientific-Technical Conference"

Progressivnaya tekhnologiya i novoye oborudovaniye dlyua proizvodstva elektronnykh priborv. Materialy nauchno-tekhn. konferentsii Yanv. 1970 g. (Cf English above) [Saratov, politekhn. in-t, Obl. dom tekhn., Obl. pravl. NTORES im. A.S. Popova, Saratov. otd. Vses. o-va "Zhaniye"--Saratov Polytechnical Institute, Oblast Technical Center, Oblast Board of the Scientific and Technical Society of the Machine-Building Industry, Oblast Board of the Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A. S. Popov, Saratov Branch of the All-Union Society "Knowledge"], Saratov, 1970, 119 pp, ill., 50 k. (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A118K)

[No abstract]

1/1

USSR

UDC 010.49

ABDULLAYEV, G. B., ANTONOV, V. B., BELEN'KIY, G. L., GUSEYNOV, D. T., NANI, R. KH., and SALAYEV, E. YU., Institute of Physics, Academy of Sciences Azerbaydzhan SSR

"Photoconductivity of $CdIn_2S_4$ Single Crystals, Recombination Scheme"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 127-131

Abstract: A study of the photoelectric properties of $CdIn_2S_4$ single crystals under intrinsic excitation, thermostimulated conductivity, as well as the radiation spectrum of crystals under the action of fast electrons, enabled the authors to obtain information on the energy level spacing in the forbidden band of $CdIn_2S_4$ and to determine some recombination and trapping center parameters.

1/1

USSR

UDC 621.315.592

SALAYEV, YU. I., KHALILOV, V. KH., ANTONOV, V. B., NANII, R. KH.

"Faraday Effect in the Exciton Absorption Region in GaSe"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 267-270

Abstract: A study was made of Faraday rotation in the exciton absorption region for weak fields (13.5 kilogauss) and at temperatures of 300 and 120° K. Comparison of the results with the data obtained from magneto-optical measurements in strong fields [K. Aoyagi, et al., J. Phys. Soc. Japan, No 21 (supplement), 1966] shows good agreement of the results. This agreement confirms the applicability of the mathematical model used and the results obtained by the different methods.

The result from investigating the Faraday effect in the absorption region of the exciton line n = 0 were processed on the basis of the Halpern theory [J. Halpern, Phys. Rev., Vol 134, No A140, 1964] and the Zwara approximation [M. Zwara, Phys. St. Sol., No 36, 735, 1969]. Relaxation times of $\tau = 0.443 \cdot 10^{-13}$ for 300° K and $\tau = 0.845 \cdot 10^{-13}$ sec for 120° K were obtained. The effective values of the g-factors were $g^* = 3.86$ for 300° K and $g^* = 3.46$ for 120° K. The estimated concentrations of the exciton states were $N = 1.59 \cdot 10^{16}$ cm^{-3} for 300° K and $N = 0.89 \cdot 10$ cm^{-3} for 120° K.

1/1

1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CARBOHYDRATE METABOLISM IN BURNS -U-

AUTHOR--SHURYGIN, D.YA., MOISEYEV, YE.A., KONSTANTINOVA, M.., SELYAYEV, V.YE., ANTONOV, V.B.
COUNTRY OF INFO--USSR

A

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 75-80
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBOHYDRATE METABOLISM, BURN, TRAUMATIC SHOCK, ADRENAL CORTEX, CATECHOLAMINE, PANCREAS, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0639 STEP NO--UR/0539/70/104/003/0075/0080

CIRC ACCESSION NO--AP0102625

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--15SEP70

CIRC ACCESSION NO--AP0102625

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS HAVE STUDIED CARBOHYDRATE METABOLISM IN VARIOUS PERIODS OF BURN DISEASE. IN THE FIRST PERIOD OF BURN DISEASE (BURN SHOCK) HYPERGLYCEMIA IS OBSERVED. IT CORRESPONDS TO GRAVITY OF THE AFFECT SN AND 60 RELATED WITH THE ENHANCED FUNCTIONING OF THE ADRENAL CORTEX. IN THE SECOND PERIOD (BURN INFECTION AND TOXICEMIA) THE REDUCTION IN BLOOD SUGAR LEVEL IS NOTED THAT COINCIDES IN TIME WITH THE REDUCTION OF CATECHOLAMINES EXCRETION, DECREASED GLUCOCORTICOID ACTIVITY OF THE ADRENAL CORTEX AND NORMALIZATION OF CORRELATION OF VARIOUS CELLS IN THE LANGERHANS ISLETS. IN BU?N EMACIATION (III D PERIOD) FURTHER REDUCTION IN BLOOD SUGAR LEVEL IS OBSERVED. DURING THE PERIOD OF RECOVERY THE AMOUNT OF SUGAR IN BLOOD IS RESTORED UP TO ITS NORMAL VALUES AND IS ASSOCIATED IN MOST PATIENTS WITH NORMALIZATION OF THE ADRENAL GLYCOCORTICOID FUNCTION.

UNCLASSIFIED

USSR

UDC: 621.397.61

IVANOV, V. P., BORISOV, B. K., KURAPOV, Ye. F., ANTONOV, V. F.

"A Device for Automatic Iris Control"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299987, Division H, filed 21 Jun 69, published 26 Mar 71, p 218

Translation: This Author's Certificate introduces a device for automatic control of the irises in television transmitting cameras. The device contains a comparison stage, an actuating mechanism and a reference voltage source. As a distinguishing feature of the patent, the reliability of iris control with sharp changes in illumination is improved by connecting the input of the actuating mechanism to the comparison stage through the normally open contacts of a selector switch, and to a storage capacitor through the normally closed contacts of the switch. The storage capacitor is connected through the normally open contacts of the switch to the reference voltage source.

1/1

Roster of Delegates of 24th CPSU Congress, Elected at 21st Leningrad Oblast Party Conference

/Cont'd from Card 17, see CHEKANOVA, Ye. A., same date/

With voting privilege:

ANIKUSHIN, M. K.,
ANTONOV, A. K.,
ANTONOV, V. I.,
ARISTOV, B. I.,
ARSEN'YEV, Yu. A.,
AFANAS'YEV, B. K.,
BABAYEV, A. I.,
BAYKOV, I. I.,
BARAUSOV, V. N.,
BASTRYGIN, Ye. A.,

/Cont'd on Card 19, see BELYAKOV, A. V., same date/

Leningradskaya Pravda, 6 Mar 71, p 1, col 2

1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CONFORMATIONS OF MEDIUM DEPSIPEPTIDE RINGS. II. VIBRATIONAL SPECTRA AND DIPOLE MOMENTS -U-
AUTHOR-(05)-ANDREYEVA, L.I., IVANOVA, T.M., YEFREMOV, YE.P., ANTONOV, V.S., SHEMYAKIN, M.M.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 475

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, DIPOLE MOMENT, EXCITED STATE, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1415 STEP NO--UR/0079/70/040/002/0475/0480

CIRC ACCESSION NO--AP0112409
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--07OCT70

CIRC ACCESSION NO--AP0112409

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF 3 KNOWN DEPSIPEPTIDES AND THEIR DIPOLE MOMENTS SHOWED THAT THESE 10, 11, AND 12 MEMBERED RING SYSTEMS EXHIBIT VARIATION OF CIS TRANS FORMS THAT DEPENDS ON RING SIZE AND SUBSTITUENT STRUCTURE. IN THE 10 MEMBER RING THE CONFORMATIONS REALIZED ARE THOSE FAVORING INTRAMOL. INTERACTION OF AMIDE AND ESTER GROUPS AND THE POSSIBILITY OF TRANSANNULAR INTERACTION IS REALIZED IN THE EXCITED STATE; THESE EFFECTS ARE MUCH WEAKER IN THE LARGER RING SYSTEMS. THE DIPOLE MOMENTS OF THESE PEPTIDES RANGE FROM 3.4D TO 4.9D.

UNCLASSIFIED

Acc. Nr: AP0049439 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0370

104620e **Thermodynamic analysis of the reduction of solid solutions of iron orthotitanate with magnetite.** Shchepetkin, A. A.; Antonov, V. K.; Dvinin, V. I.; Men, A. N.; Chufarov, G. I. (USSR). *Izv. Akad. Nauk SSSR, Metal.* 1970, (1), 51–5 (Russ). The coeffs. of the equation for the equil. O_2 pressure (P_O, given in atm.) vs. c were calcd. for spinel solid solns. $(Fe_3O_4)_c(Fe_2TiO_4)_{1-c}$ in equil. with $FeO_{1+\delta}$ at 1000°: $\ln P_O = 5.11c - 34.11$ (for $0.10 \leq c \leq 0.55$), $\ln P_O = 9c - 36.25$ (for $0.55 \leq c \leq 0.70$), and $\ln P_O = 0.43c - 30.25$ (for $0.70 \leq c \leq 1.0$). The expressions for activities (a) of the components of the system were derived for 2 cases: (*1*) for the equil. of $FeO_{1+\delta}$ with spinel solid soln. of compn. close to that of magnetite: $d(\ln a_4) - 2.21\, d(\ln a_1) - 1.17\, d(\ln a_2) = 0.305\, d(\ln P_O)$; (*2*) for the equil. of $FeO_{1+\delta}$ with a spinel solid soln. of compn. close to that of Fe_2TiO_4: $d(\ln a_4) - 2.678\, d(\ln a_1) - 0.484\, d(\ln a_2) = 0.419\, d(\ln P_O)$, where $a_1 = a_{FeO}$, $a_2 = a_{Fe_{2/3}O}$, $a_3 = a_{Fe_2TiO_4}$, and $a_4 = a_{Fe_3O_4}$. The defect state of $FeO_{1+\delta}$ was expressed in terms of its extreme states FeO and $Fe_{2/3}O$. The activities of the components were then calcd. with the use of the expressions (*1*) or (*2*) and the Gibbs-Duhem equations for the spinel solid solns. and $FeO_{1+\delta}$. Activities exhibit pos. deviations with respect to ideal soln. The activities were calcd. also by a statistical thermodynamic method. The compn. of the solid soln. was expressed as $Fe^{2+}_{\lambda}Fe^{3+}_{1-\lambda}[Fe^{2+}_{2-c-\lambda}Fe^{3+}_{2c-1+\lambda}Ti^{4+}_{1-c}]O_4$, the ions given in brackets being assumed in octahedral positions. L. Kuca

1/1

REEL/FRAME
19801277

1/3 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS AND EQUILIBRIUM DURING THE DISSOCIATION OF SOLID SOLUTIONS OF IRON AND MANGANESE ORTHOTITANATES -U-

AUTHOR-(04)-SHCHEPETKIN, A.A., ANTONOV, V.K., ZAKHAROV, R.G., CHUFAROV, G.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (2), 144-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SYNTHESIS, SOLID SOLUTION, CHEMICAL REDUCTION, SPINEL, CRYSTAL LATTICE STRUCTURE, TITANATE, MANGANESE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1122 STEP NO--UR/0370/70/000/002/0144/0146

CIRC ACCESSION NO--AP0121682

UNCLASSIFIED

2/3 . 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF SOLID SOLNS. OF FE SUB2 TIO SUB4 AND MN SUB2 TIO SUB4 AND THE PHASE EQUIL. PROCESSES OCCURING DURING THE REDN. OF SOLID SOLNS. WERE STUDIED. SYNTHETIC FE SUB2 TIO SUB4 AND MN SUB2 TIO SUB4 WERE PRESSED INTO TABLETS AND HEATED FOR 10 HR AT 1100DEGREES UNDER AN ATM. OF 88 VOL.PERCENT CO AND 12 VOL.PERCENT CO SUB2. THE SAMPLES THEN WERE TEMPERED IN WATER AND ANALYZED BY USING AN X RAY METHOD. FE SUB2 TIO SUB4 AND MN SUB2 TIO SUB4 ARE PERFECTLY MISCIBLE, FORMING A CONTINUOUS SERIES OF SOLID SOLNS. HAVING A CRYSTAL LATTICE OF SPINEL STRUCTURE. THE PERIOD OF THE LATTICE INCREASES WITH INCREASING CONCN. OF MN SUB2 TIO SUB4 IN THE SOLID SOLN. AND RANGES WITHIN THOSE OF PURE FE SUB2 TIO SUB4 AND MN SUB2 TIO SUB4 (8.535-8.679 ANGSTROM). THE STUDY OF THE EQUIL. COMPN. OF THE SAMPLES AS A FUNCTION OF THE AMT. OF O PRESENT WAS PERFORMED BY HEATING THE SAMPLES AT 1000DEGREES UNDER AN ATM. OF H AND H SUB2 O. THE AMT. OF O PRESENT IN THE SAMPLE (EXPRESSED IN PERCENT OF THE TOTAL AMT. OF O PRESENT) WAS CONTROLLED BY CHANGING THE PARTIAL PRESSURE OF H IN THE REDUCING ATM. ON REMOVAL OF 0-25PERCENT O, SPINEL, RHOMBOHEDRAL, AND METALLIC FE PHASES ARE IN EQUIL. THE SPINEL PHASE CONSISTS OF A SOLID SOLN. OF MN SUB2 TIO SUB4 AND FE SUB2 TIO SUB4. THE RHOMBOHEDRAL PHASE CONSISTS OF SOLID SOLN. OF ILMENITE AND PYROPHANITE. ON INCREASING OF THE AMT. OF O REMOVED, THE CONCN. OF FE SUB2 TIO SUB4 IN THE SPINEL PHASE DECREASES AND THE CONCN. OF PYROPHANITE IN THE RHOMBOHEDRAL PHASE INCREASES. AT 25-35PERCENT O REMOVAL, A RHOMBOHEDRAL PHASE EXISTS IN EQUIL. WITH A TIO SUB2 PHASE AND A METALLIC FE PHASE.

UNCLASSIFIED

3/3 . 017 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0121682
ABSTRACT/EXTRACT--AS THE AMT. OF O REMOVED IS INCREASED, THE AMT. OF ILMENITE PRESENT IN THE RHOMBOHEDRAL PHASE INCREASES.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--[illegible]70

TITLE--KINETICS OF IRREVERSIBLE THERMAL DENATURATION OF CHYMOTRYPSIN. COMPARATIVE STABILITY OF THE PROTEIN MOLECULE AND ITS ADSORPTION SITE

AUTHOR-(03)-ANTONOV, V.K., VORONTYNTSEVA, T.I., KOSAN, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 240-245

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL REACTION KINETICS, PROTEIN, ENZYME ACTIVITY, OPTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1417 STEP NO--UR/0463/70/004/002/0240/0245

CIRC ACCESSION NO--AP0054279

UNCLASSIFIED